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A meta-analysis of the impact of community policing on crime reduction

Niyazi Ekici,* Huseyin Akdogan,† Robert Kelly,‡ and Sebahattin Gultekin§

ABSTRACT

Over the last few decades, many studies have been conducted to understand whether community policing (CP) has an impact on reducing crime rates. Yet there is still substantial controversy surrounding the question of the impact of CP on crime rates. Despite the broad understanding of CP, various types of measurement of crime statistics have led researchers to conduct meta-analyses of the phenomenon. This study combines two previous meta-analyses of CP and Turkish and English online searches. We used the Comprehensive Meta-Analysis (CMA 3.0) statistical program to calculate the effect sizes of previous studies. We employed odds ratio (OR) as the effect size, since it is one of the most appropriate methods for proportions. We found no evidence suggesting that CP has an impact on reducing disorders, drug sales, or property crime, but it does have an impact on reducing crimes such as burglary, gun use, drug use, Part I crimes, and robbery, as well as fear of crime. Depending on crime type, CP can be a promising policing strategy to reduce crimes. Our cross-country study found a statistically significant, positive impact of CP, despite the limitations of including only Turkish- and English-language studies.

Key Words Comprehensive meta-analysis; odds ratio; effect size.

INTRODUCTION

Community policing (CP) or community-oriented policing is a philosophy that challenges the traditional policing orthodoxy. The central tenet of CP is community involvement in solving community problems, including crime. Previous research into the effectiveness of CP could not identify robust, one-tailed results on crime reduction. However, findings suggest that CP may have a positive effect on citizen satisfaction, fear of crime, and trust in the police (Weisburd & Eck, 2004; Skogan, 2004). Measuring the effectiveness of CP presents many challenges, primary among them the very definition of "community policing." There is no standard definition of CP, and the scope of proffered definitions is broad. Community policing strategies and the implementation methods for those strategies are wide-ranging because of the inherent need to tailor strategies to the needs of individual communities.

This study explores the extent to which CP impacts crime rates. We begin with a review of the literature on CP before discussing the meta-analysis methodology and the findings. We conclude with a discussion of the suggestions from our findings for future studies.

BACKGROUND

Community policing emerged during the 1970s as a novel form of community–law enforcement partnership. By the 1990s, the United States Bureau of Justice Assistance – Community Policing Consortium identified the "two core components" of community policing as "community partnership and problem-solving" (Community Policing Consortium, 1994). Greene (1997) identified CP in terms of practices and incentives for greater information sharing between the police and community residents, and as a mechanism to improve police service to the residents. Trojanowicz and Bucqueroux defined community policing as "a new philosophy of policing, based on the concept that police officers and private citizens working together in creative ways can help solve contemporary community problems related to crime, fear of crime, social and physical disorder, and neighborhood decay" (1990, p. 5). Although there remains no standard definition, CP is frequently described in similar ways and the "two core components"—partnerships and problem-solving—remain very much visible in more current discussions of CP despite vast changes to the policing environment since the 1990s. Community policing relies on a comprehensive approach to

Correspondence to: Niyazi Ekici, Department of Law Enforcement and Justice Administration, Western Illinois University, 1 University Cir., Macomb, IL 61455, USA.
E-mail: N-ekici@wiu.edu

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community problems, embracing cooperative partnerships, and the active involvement of citizens in policing to improve quality of life and reduce the fear of crime (Roh & Oliver, 2005; Xu et al., 2005). Stevens (2002) notes that CP focuses on "helping others to help themselves" (p. 64). Community policing, essentially, invites the police to change from a reactive mindset to proactive policing; in other words, from crime fighters to problem-solvers. In more recent years, the United States Department of Justice Office of Community Oriented Policing Services (COPS) has added "organizational transformation" as a third component of community policing, and COPS has explained community policing as "a philosophy that promotes organizational strategies that support the systematic use of partnerships and problem-solving techniques to proactively address the immediate conditions that give rise to public safety issues such as crime, social disorder, and fear of crime" (Office of Community Oriented Policing Services, 2012).

Crime control, maintaining order, and service provision are three functions of policing (Fagan & Tyler, 2004; ABA – Criminal Justice Section, 2020). Neighbourhood watch programs, voluntary service within police departments, citizen police academies, deployment of community service officers, community-based foot patrols, regular meetings with community leaders, and in-service training are typical community policing activities. These activities are directed towards the priorities of community policing: maintaining order and service provision (Zhao et al., 2003). Philosophically, CP promotes organizational transformation, growth of citizen accountability, decentralized decision-making, and greater discretion of line officers in handling calls and autonomy in relationship building (Lumb & Breazeale, 2003; Office of Community Oriented Policing Services, 2012).

Studies that have attempted to discuss premises and propositions of CP have described the purpose of CP as well (Basar, 2016; Akdoğan, 2014; Rosenbaum et al., 2011; Gultekin & Gultekin, 2011; Idriss et al., 2010; Hizli, 2010). The consensus seems to be that CP is a contemporary partnership approach that focuses on working with and engaging in the community. The underlying rationale of CP was to slow down rising crime rates. It was also believed to contribute to police legitimacy and community confidence in police departments. Community policing was initiated to cooperate with members of the community to fight crime.

Community policing is now considered a best practice in contemporary policing and has become an increasingly popular law enforcement strategy internationally, deployed in many countries, including the United States, United Kingdom, Turkey, China, and those adhering to the Organization for Security and Co-operation in Europe (Basar, 2016; Karademir, 2015; Akdoğan, 2014; Gultekin & Gultekin, 2011; Idriss et al., 2010; Hizli, 2010; Zhang et al., 2007; Ekici, 2010; Sozer & Ekici, 2010). Over 25% of the United Kingdom's population and over 40% of the population in the United States live in areas where some type of CP neighbourhood watch program has been implemented (Bennett et al., 2006). The most current figures for the United States based on 2016 Law Enforcement Management and Administrative Statistics (LEMAS-2016) show that 87.4% of police departments (serving 100,000 or more residents) have designated personnel for CP. This ratio is relatively smaller, 28.5%, for police departments serving fewer than 100,000 residents (Hyland & Davis, 2019). Although it has been widely accepted as one of the most popular approaches to modern-day policing, the effectiveness of the strategy is ambiguous. Its impact on reducing crime or crime clearance rates is far from being decisively clear. Traditional police performance metrics have included crime rates, clearance rates, response times, and productivity or workload statistics, especially where the agency's organizational culture emphasizes crime fighting (Hodgkinson et al., 2019). Community policing models are difficult to reconcile with the effectiveness measures used by traditional models because of the proactive aims of CP to prevent crime, increase citizens' quality of life, and reduce fear of crime. MacDonald (2002) also noted that evaluating the effectiveness of police–community partnerships is difficult because of the broad scope of the concept. However, there have also been some longitudinal studies, cross-sectional studies, and multiple site evaluations on the effectiveness of CP programs (Zhao et al., 2009).

Several empirical studies describe CP as particularly effective in crime prevention. Zhang et al. (2007), for example, suggest that the collaboration between the community, the police, and local government has a positive effect on crime control. That is, increasing collaboration leads to lower crime rates. Xu et al. (2005) found a significant effect of CP variables (working with community and crime prevention) on disorder. Zhao et al. (2006) analyzed 50 studies on CP and its effects on reducing the fear of crime. They found that a reduction in fear was shown in 31 of the studies, no change in fear was shown in 18, and only one study reported an increase in fear. Roh & Oliver's 2005 study on CP and fear of crime is consistent with the findings of Zhao et al. (2006) regarding CP and decreases in fear of crime. MacDonald (2002), in one of the most visible patrol beat studies, the Kansas City gun experiment, found that a significant reduction in gun crimes was shown in the experimental beat that used CP. MacDonald also found that proactive policing methods were effective in preventing violent crime. Zhao et al.'s (2003) findings on the implementation of CP on all core functions of policing were statistically significant and therefore suggest that CP programs are effective when used to control crime, decrease social disorder, and deliver services to the community. Some researchers consider CP a necessity, the only way to counter rising crime rates and to ensure public support for police crime control efforts (Hancer, 2008). Neighbourhood watch programs, a frequent strategy of CP, have been associated with a significant decrease in crime rates, ranging from a 16% to 26% decrease (Bennet et al., 2008; 2006; and Bennet & Holloway, 2004). Another study reports a 75% decrease in burglary rates in neighbourhoods where the Kirkholt Burglary Prevention Project was implemented (Forrester et al., 1988). In a separate victimization survey, another study reported offenses decreased from a total of 247 reported offenses in 979 households before neighbourhood watch to 174 reported offences in 1,060 households after neighbourhood watch was implemented, which indicates a decrease of between 25% and 16% (Bennett & Holloway, 2004). Exploring the impact of CP on four selected US cities (Chicago, Lowell, Newark, San Diego), Weiss (2005) noted decreases in violent and property crime rates in the target cities from 1993 through 2002 according to a qualitative analysis (pp. 172–173). Importantly, Newark and Lowell are credited for larger decreases in violent and property crimes

due to the intensive CP training and accountability. Weiss (2005) also foresaw that insufficient federal funding of both traditional and CP efforts, due to the change in public mood and bureaucratic priorities in the wake of the September 11 attacks, might lead to a resurgence of crime rates, as agencies beleaguered with new challenges returned to more comfortable traditional policing methods.

However, not all empirical studies provide supporting evidence for the effectiveness of CP. Some argue the ineffectiveness of CP programs in crime control and ultimately in lowering crime rates (Gill et al., 2014; Idriss et al., 2010; MacDonald, 2002; Greene, 1997; and Bennett & Lavrakas, 1989). Mukherjee & Wilson (1987) contend the reduction of burglaries in the Kirkholt Burglary Prevention Project may have simply been the result of displacement of crime to other neighbourhoods. Similarly, Henig (1984) argues that, in the examination of neighbourhood watch programs, there is no definitive evidence to suggest that crime has dropped in neighbourhoods with a watch program, nor do reported crimes fall more rapidly in such areas. Even though the program makes people feel safer, which consequently decreases fear of crime, it does not have any significant effect on crime control. Some researchers state that CP can be effective in rural areas but not in urban settings. Community policing initiatives can only be effective in isolated cities and when implemented vigorously, because simply adopting a plan and training is not enough to counter criminal activity (MacDonald, 2002). Most urban police departments operate using the same methods that they did before adopting their versions of CP (MacDonald, 2002). Many, for instance, continue employing their pre-CP approaches to fight crime, with the exception that more information is gathered by the community (Greene, 1997). Xu et al. (2005) suggest that the only way that CP can impact crime is if the departments work to incorporate disorder control into their operating strategies.

Is CP effective to reduce crime rates? To address this question, two meta-analytical reviews have been published so far: Bennett et al. (2006) examined whether neighbourhood watch programs reduce crime. They analyzed 18 studies and reported that neighbourhood watch reduced crime in 15 of the 18 studies. The odds ratio (OR) was used as the effect size to determine how well neighbourhood watch works. In reviewing the 18 studies, they found that neighbourhood watch was successful in reducing crime (OR = 1.19). This OR of 1.19 means that crime was 19% greater in the control area compared with the experimental area. Using the formula (1 – 1/OR), it can also be inferred as a 16% decrease in crime in the experimental area compared with the control area.

More recently, Gill et al. (2014) conducted a meta-analysis. They tested for effects of CP on crime, disorder, fear of crime, citizen satisfaction, and police legitimacy. They found 25 reports that measured pre- and post- changes in outcomes in experimental and control areas. The findings of this meta-analysis suggest that CP has limited effects on crime and fear of crime. However, their findings revealed that CP increases trust in the police and satisfaction with law enforcement services, and this eventually leads to greater public willingness to report crime to the criminal justice system. Notably, this creates a "reporting effect" that masks actual crime reductions. Paradoxically, greater willingness to report crimes to the police may inherently increase the number of reported crimes by the police creating an increase in crime statistics for jurisdictions that were successful in promoting better community relationships and information sharing. However, their findings show that CP strategies have positive effects on perceptions of disorder and police legitimacy (Gill et al., 2014).

METHODS

This meta-analysis is intended to glean a deeper understanding of CP and how it is understood and implemented around the world. Some countries accept it philosophically as a new way of policing, whereas others see it as simply a public relations tool. There are numerous CP strategies which are scalable based on cultural and environmental factors. From the inception of CP, there has been persistent debate regarding its effectiveness on crime reduction. Besides the literature about CP and its strategies, there is also quantitative research measuring the effectiveness of CP on crime reduction. The findings of this research are not clear cut, with different, and at times conflicting, research results regarding the effectiveness of CP. In the current study, we aimed to extend and consolidate previous analyses. This meta-analysis intended to analyze whether CP is effective in crime reduction based on the findings of previous research. The following research questions are addressed in this study: (1) Does CP reduce crime? (2) Do the impacts of CP vary across countries? And finally, (3) do the impacts of CP vary by crime type?

Inclusion Criteria

This meta-analysis expanded the two previous meta-analyses on the effect of CP on crime[1] reduction undertaken by Gill et al. (2014) and Bennett et al. (2006). First, we combined these two previously conducted studies, then added newly conducted research to our analysis. Bennett et al.'s meta-analysis had three inclusion criteria: (1) the type of intervention; "stand alone neighborhood watch schemes, neighborhood watch, property marking and security surveys" (p. 440) (2) outcome; the types of crimes included in the review were "crime against residents, crime against dwellings and other (street) crimes occurring in residential areas" (p. 441), and (3) evaluation design. They added this evaluation design criteria to select the highest quality research for the review. They used the Maryland Scientific Method Scale (SMS). This scale consists of five points; 1 referring to the weakest design and 5 referring to the strongest design regarding general internal validity. Applying Sherman & Eck (2002), level 3 is mandatory for evaluations to be considered as having a reasonable level of certainty. Bennett et al. followed this interpretation and employed level 3 for the evaluation design. In practice this means that the selected research must have at least one experimental group and at least one control group to compare the results.

Gill et al.'s (2014) analysis had the following inclusion criteria. The first was that studies should employ at least one of the CP strategies which involve "consultation or collaboration between the police and local citizens" (p. 7). These consulta-

[1] Crime types included in this meta-analysis are the categories/types created in previous research. Some categories may overlap and seem conflicting (i.e., burglary and robbery as a category as well as being "Part 1 crimes"), but they reflect different research at different times and places.

tions or collaborations should concern solving community problems and include activities such as police officers' visits to houses, information sharing, and partnership building for crime prevention. The second criterion was that the research should be based on a quantitative analysis relying on the data from control and comparison groups and pre–post intervention measures of effects. The third was the unit of analysis. Eligible studies should be conducted in police jurisdictions. The fourth criterion is that the research should analyze CP's impact on at least one type of crime or disorder, such as arrests, incident reports, or victimization reports, or on other relevant definitional measures, such as citizen satisfaction with police, fear of crime, or citizen perception of police legitimacy. The final (fifth) criterion was the publication year of the study, with eligible research being published after 1970, when interest in CP started to increase and thus became a recognizable phenomenon.

The inclusion criteria for the current meta-analysis are consistent with the criteria of the above-mentioned two meta-analyses. In addition, we employed three more inclusion criteria: (1) we included studies either in English or Turkish to incorporate a more international perspective; (2) we selected studies which were designed to be a quantitative analysis; and (3) we employed the unit of analysis criterion: studies conducted in a police jurisdiction or in a part of police jurisdiction were selected.

Search Strategy

We conducted searches in English and in Turkish. First, we searched the following electronic databases and websites in English: EBSCOHOST, Proquest, JStor, Google Scholar, and PsycINFO. Second, we searched Google Scholar in Turkish and the thesis and dissertation search engine of the Turkish Higher Education Institute (YOK-Turkish acronym). Third, we searched library catalogs of Western Illinois University, Rutgers University, and the Hague University of Applied Sciences.

Eligible Publications

The above-mentioned process resulted in 230 publications, excluding studies used in Bennett et al.'s (2006) and Gill et al.'s (2014) meta-analyses. After inspecting the abstracts of these studies, we identified 210 as unique publications, especially in Turkish. Further scrutiny of these studies yielded 57 eligible studies for further examination in the meta-analysis. Overall, we excluded 48 of these studies due to not meeting the previously stated inclusion criteria (for example, lack of sufficient statistical data, providing only graphics of the results, or not including an outcome evaluation of one of the CP strategies). This left 9 studies covering 14 evaluations that were included in the meta-analysis. Studies were included in the meta-analysis if they provided sufficient data that could be used for calculating effect sizes. The list of studies in the meta-analysis is presented in Table I below. Although there is a total of 32 studies on the list, there are 60 evaluations in the meta-analysis. The difference is due to the fact that some of the studies include more than one evaluation (different crime types or different cities) of the effectiveness of CP. For instance, the study conducted by Braga et al. (2012) includes two different evaluations: one is the effectiveness of CP on drug sales and the other is on property crime. Skogan & Harnett (1997) conducted their analysis in five different regions: Austin, Englewood, Marquette, Morgan, and Rogers.

Coding and Statistical Procedures

We created a data set combining the studies used in the meta-analyses of Bennett et al. (2006) and Gill et al. (2014). This combination yielded a total of 46 eligible studies to include in the meta-analysis. Adding 14 more evaluations to this combination created a sample size of 60 evaluations for the meta-analysis.

We coded a range of relevant information from each study: outcome, country of the study, and year of the study.

TABLE I List of studies included in the meta-analysis

	Studies Included in Bennett et al.'s (2006) and Gill et al.'s (2014) Meta-Analyses	Newly Added Studies
1	Anderton, K. J. (1985)	Bozkurt, M. F. (2011)
2	Bennett, T. H. (1990)	Demir, S. (2008)
3	Breen, M. D. (1997)	Hyland, S. S., & Davis, E. (2019)
4	Cirel, P., Evans, P., McGillis, D., & Whitcomb, D. (1977)	Kucuk, M. (2012)
5	Collins, P., Greene, J. R., Kane, R., Stokes, R., & Piquero, A. (1999)	MacDonald, J. M. (2002)
6	Connell, N. M., Miggans, K., & McGloin, J. M. (2008)	Palaci, M. (2008)
7	Cordner, G., Roberts, C., & Jacoby, K. (1999)	Roh, S., & Oliver, W. M. (2005)
8	Forrester, D., Chatterton, M., & Pease, K. (1988)	Xu, Y., Fiedler, M. L., & Flaming, K. H. (2005)
9	Giacomazzi, A. L. (1995)	Zhang, L., Messner, S. F., & Liu, J. (2007)
10	Henig, J. R. (1984)	
11	Jenkins, A. D., & Latimer, I. (1986)	
12	Koper, C. S., Hoffmaster, D. A., Luna, A., McFadden, S., & Woods, D. J. (2010)	
13	Lowman, J. (1983)	
14	Matthews, R., & Trickey, J. (1994a)	
15	Matthews, R., & Trickey, J. (1994b)	
16	Pate, A. M., Wycoff, M. A., Skogan, W. G., & Sherman, L. W. (1986)	
17	Research and Forecasts Inc. (1983)	
18	Segrave, M., & Collins, L. (2005)	
19	Skogan, W. G., & Hartnett, S. M. (1997)	
20	Tilley, N., & Webb, J. (1994)	
21	Tuffin, R., Morris, J., & Poole, A. (2006)	
22	Uchida, C. D., Forst, B., & Annan, S. O. (1992)	
23	Wycoff, M. A., & Skogan, W. G. (1993)	

We documented the pre- and post-intervention result measure statistics in the experiment and control areas, including the statistical assessments used and any reports of statistical significance, to calculate effect sizes.

We used the Comprehensive Meta-Analysis (CMA 3.0) statistical program to calculate effect sizes. We employed diverse approaches for calculating effect sizes based on the outcome measure and the presentation of findings in the original research. We used odds ratio (OR) as the effect size because it is the most appropriate for proportions, where OR > 1 signifies a favourable outcome for the treatment groups (i.e., CP).

Data Analysis

Meta-analysis is useful in standardizing the findings of different studies to ascertain a uniform effect size for each discrete research variable and a weighted mean effect size for groups of research. Thus, calculating the effect size (OR in this study) to conclude how well CP works is the main goal of this meta-analysis. Two models are used for this calculation: the random effects model and the fixed effects model. One of the main concepts that have been extensively discussed in the meta-analysis is choosing the effect models (Field, 2005). The main difference between these two effects models is based on the null hypothesis. The null hypothesis in the fixed effects model is "there is a zero effect in every study" (Borenstein et al., 2009; p. 83). In the random effects model, the null hypothesis is "the mean effect is zero" (p. 83). Although some scholars (Rosenthal, 1991) rely on the level of heterogeneity across studies to determine the effects model, Borenstein et al. (2009) suggest using the effects model based on the expectations of the researcher. The eligible studies for the meta-analysis had various methodologies comprising CP intervention; thus, we assumed a random effects model.

Some of the eligible studies included several comparisons and multiple outcomes for the same concept. Computing the effect size for these studies can be done in several ways. Setting the unit of analysis as the study itself instead of the outcomes is the first alternative, which causes the loss of valuable information and creates selection bias because it pushes the meta-analyst to choose one of the outcomes to compute the effect size. The second alternative is considering each of the outcomes as the unit of analysis, which, however, ignores the fact that the outcomes of one study cannot be considered independently. The third alternative, employing the average effect size of the various outcomes in one study, was identified as the best alternative in this case (Malle, 2006).

RESULTS

Table II presents a summary of the characteristics of the studies included in the meta-analysis. All of the studies were published between 1977 and 2012. More than half (60%) of the studies were conducted in the United States. Studies conducted in the United Kingdom comprised 28.3%. Four studies were conducted in Turkey and one each from China, Canada, and Australia. Most evaluations included burglaries (20) and fear of crime (16).

Test of Heterogeneity

Cochran's Q statistics were used to verify heterogeneity across the studies included in the meta-analysis. The result of Cochran's Q statistics is given in Table III. The results led us to determine the significance level of the dispersion in the effect sizes. The forest plot in Figure 1 presents a visual depiction of this dispersion among the effect sizes of the studies.

The overall OR under the fixed effects model is 1.095 ($p < 0.001$). A test of overall heterogeneity is found to be significant (percentage of total variance (I^2) = 81.5% (Variance (Q) = 318.455, degrees of freedom (df) = 59, $p < 0.001$). These results suggest that significant dispersion (81.5%) exists between studies that are not due to chance alone. Heterogeneity indicates that variance can be explained by moderator analysis.

Table III also shows the mean OR for the 60 evaluations is 1.197 using the random effects model. This mean effect size is statistically significant at $p < 0.001$. A mean OR of 1.19 can be inferred to mean that listed crimes were 19% greater in the control area compared with the treatment area or that it

TABLE II Characteristics of the studies included in the meta-analysis

Parameter	Item	N	%
Outcome	1 Burglary	20	33.3
	2 Disorder	5	8.3
	3 Drug sales	3	5.0
	4 Fear of crime	16	26.7
	5 Guns and drugs	5	8.3
	6 Part 1 crimes	4	6.7
	7 Property crimes	5	8.3
	8 Robbery	2	3.3
	Total	60	100.0
Country	1 Australia	1	1.7
	2 Canada	1	1.7
	3 China	1	1.7
	4 Turkey	4	6.7
	5 United Kingdom	17	28.3
	6 United States	36	60.0
	Total	60	100.0
Parameter	**Min.**	**Max.**	**Mode**
Year	1977	2012	1986

TABLE III Overall effects and test of heterogeneity

	Effect Size Estimate					
Model	**k**	**OR**	**95% CI**		**Z**	***p***
Fixed	6w0	1.095	1.070	1.120	7.784	0.000
Random	60	1.197	1.197	1.111	4.717	0.000

Test of Heterogeneity				Tau Squared		
Q-Value	df(Q)	*p*	I^2	Tau squared	S.E.	Tau
318.455	59	0.000	81.473	0.042	0.024	0.206

k = number of studies; OR = odds ratio, effect size; CI = confidence interval; Z = Z-score; p = significance level; Q= variance; df = degrees of freedom; I^2 = percentage of total variance; S.E. = standard error.

decreased by 16% (1 – 1/OR) in the treatment area compared with the control area.

Standardizing the results across studies to produce a uniform effect size for each individual study is the main advantage of the meta-analysis over other types of reviews. A summary of the results of the 60 evaluations included in the meta-analysis is given in a forest plot in Figure 1. The figure shows that 14 evaluations had an OR < 1, indicating an unfavourable effect on crime, and 46 evaluations had an OR > 1 indicating a favourable effect on crime. Thus, in the majority of the evaluations, CP was associated with an anticipated change in crime (a reduction).

Moderator Analysis and Meta Regression

Two categorical moderators were defined in the meta-analysis: outcome and country. These categorical moderators are used in moderator analysis to examine the potential for differences in the overall effect sizes of the studies. The results of the moderator analysis are presented in Table IV.

Moderator analysis of the outcome indicated a significant effect on the variation of the ORs. There are major differences between the ORs of the studies based on their outcomes ($Q_B = 63.2$, df = 7, $p = 0.000$). Studies measuring burglary (OR = 1.122), fear of crime (OR = 1.275), guns and drugs (OR = 1.443), Part 1 crimes (OR = 1.168), and robbery (OR = 1.606) have ORs > 1. We can conclude that CP is effective to reduce these types of crime. On the other hand, CP has no effect on reducing crimes related to disorder, drug sales, and property crime (OR = 0.861, 0.394, and 0.935, respectively).

There was significant effect on the variation of the effect sizes (OR) for the countries (Table V). There is a major difference between the ORs of the studies based on where they were conducted ($Q_B = 28.0$, df = 5, $p = 0.000$). The only study that had an OR < 1 was Australia, which means that CP had no effect in this study. However, other countries (Canada, China, Turkey, UK, and USA) had ORs > 1, indicating that CP was effective in reducing crimes. Studies conducted in Turkey (OR = 1.672; $p = 0.001$) demonstrated significantly larger effect than the other included countries.

The integer moderator variable is the year of the publication and is subjected to meta-regression analysis. The results are given in Table VI below.

The results of the meta-regression showed that the year of the publication is not significant in predicting the variations in the effect size.

Publication Bias

The funnel plot for observed and predicted studies is presented in Figure 2. Asymmetry of the funnel plot indicated the potential for missing studies.

Fail-safe N, with alpha set at 0.05, indicated that 857 missing studies with a zero effect size would bring the *p*

TABLE IV Findings of moderator analysis based on outcome

Group	Effect Size Estimates			Test of Heterogeneity			ANOVA Results			
Outcomes	**k**	**OR**	***p***	**Q**	**I^2**	***p***	**$Q_{W\ Df=52}$**	***p***	**$Q_{B\ df=7}$**	***p***
Burglary	20	1.122	0.002	36.78	48.35	0.008	255.251	0.000	63.2	0.000
Disorder	5	0.861	0.592	67.64	94.09	0.000				
Drug sales	3	0.394	0.391	37.33	94.64	0.000				
Fear of crime	16	1.275	0.001	47.77	68.60	0.000				
Guns and drugs	5	1.443	0.028	16.19	75.29	0.003				
Part 1 crimes	4	1.168	0.072	16.43	81.75	0.001				
Property crime	5	0.935	0.44	23.74	83.15	0.000				
Robbery	2	1.606	0.526	9.37	89.33	0.002				

k = number of studies; OR = odds ratio, effect size; *p* = significance level; Q= Variance; I^2 = percentage of total variance; Q_w = Qwithin; Q_B = Qbetween; df = degrees of freedom.

TABLE V Findings of moderator analysis based on country

Group	Effect Size Estimates			Test of Heterogeneity			ANOVA Results			
Country	**k**	**OR**	***p***	**Q**	**I^2**	***p***	**$Q_{W\ Df=54}$**	***p***	**$Q_{B\ df=5}$**	***p***
Australia	1	0.907	0.465	0.00	0.00	1.000	290.478	0.000	27.978	0.000
Canada	1	1.490	0.482	0.00	0.00	1.000				
China	1	1.171	0.030	0.00	0.00	1.000				
Turkey	4	1.672	0.001	7.25	58.62	0.064				
United Kingdom	17	1.249	0.000	20.04	20.16	0.218				
United States	36	1.150	0.006	263.19	86.70	0.000				

k = number of studies; OR = odds ratio, effect size; *p* = significance level; Q= variance; I^2 = percentage of total variance; Q_w = Qwithin; Q_B = Qbetween; df = degrees of freedom.

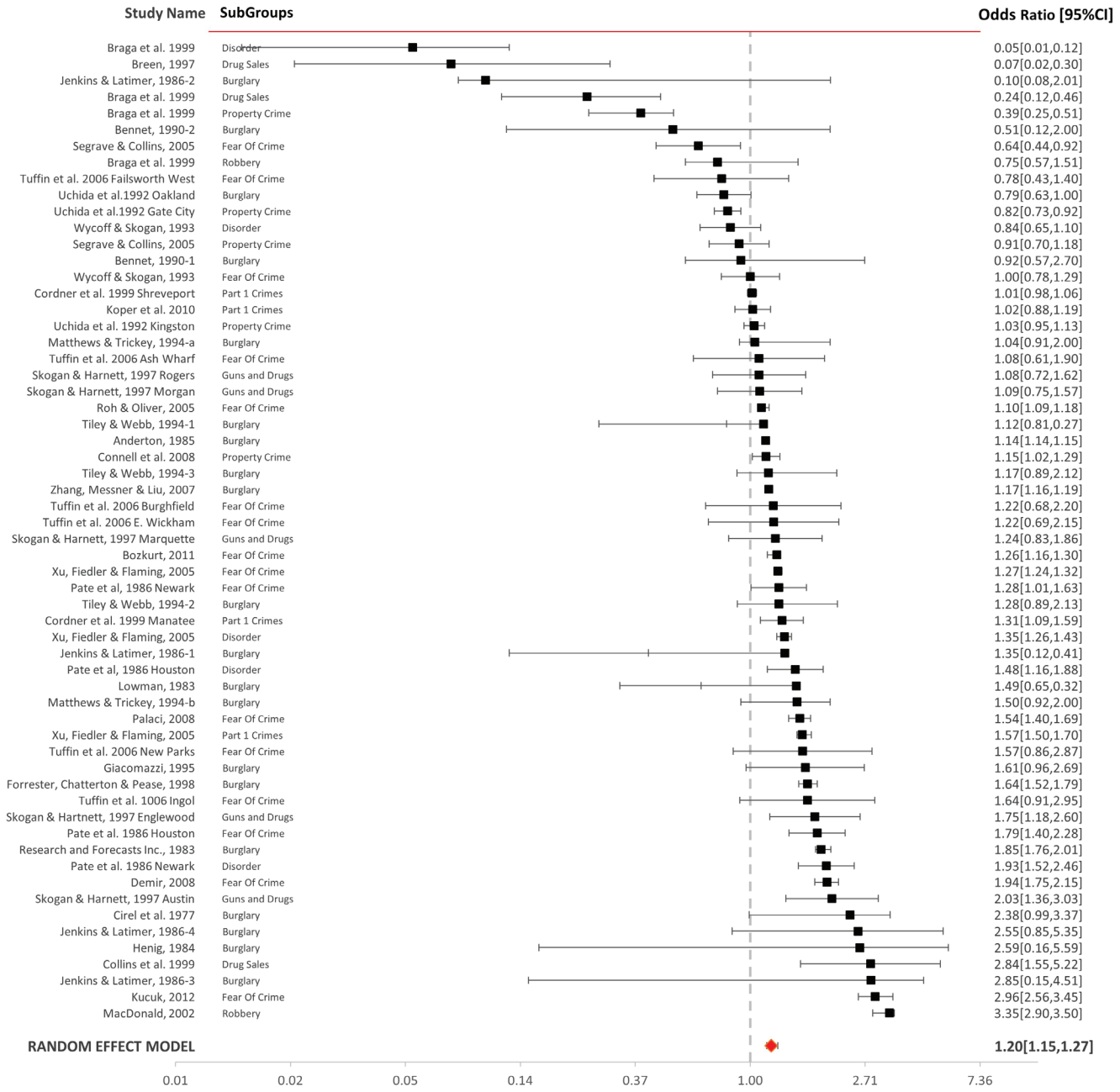

FIGURE 1 Forest plot – summary of the results of the 60 evaluations included in the meta-analysis
CI = confidence interval.

value higher than the alpha, i.e. nullify the significant effect at $p > 0.05$.

DISCUSSION

We conducted a meta-analysis to examine the effects of CP on crime rates. We included studies that tested the effects of CP or one of its strategies, such as neighbourhood watch, on crime rates. In general, the results provided evidence for the potential positive intervention of CP in reducing crime, which is consistent with the findings of the previous meta-analysis conducted by Bennett et al. (2006) but not consistent with the findings of Gill et al. (2014). Bennett et al. (2006) focused on one of the most known and common tools of CP, the neighbourhood watch. They concluded that neighbourhood watch was related to a relative reduction in crime of about 16%. Although they could not precisely identify the reasons for this finding, they posit that neighbourhood watch was related to a reduction in crime because surveillance increases, social control is enhanced, and the opportunity for crime decreases with neighbourhood watch programs.

On the other hand, Gill et al. (2014), could not find evidence supporting the notion that community policing resulted in crime prevention. In particular, they could not find evidence

TABLE VI Findings of the meta-regression

Covariate	B	S.E.	95% CI Lower	95% CI Upper	Z	*p*
Intercept	7.5277	9.6607	-11.4068	26.4623	0.78	0.4359
Year	-0.0037	0.0048	-0.0132	0.0058	-0.76	0.4469

B = regression coefficient; S.E. = standard error; CI = confidence interval; Z = Z-score; *p* = significance level.

of the association between CP and fear of crime. However, they found that citizen satisfaction with the police increases with CP.

The current meta-analysis found no evidence suggesting that CP had an impact on reducing disorders, drug sales, or property crimes. However, the current study found evidence that CP had an impact on reducing crimes such as burglary, fear of crime, guns and drugs, Part 1 crimes, and robbery. Despite variations in location, CP indicated significant reductions in crimes, except for Australia, where CP did not show any impact. The primary explanation for these differences in the findings may be the different research settings of the three meta-analyses.

Our findings show that generalization about the relationship between CP and crime reduction depends on crime type. Discrediting CP wholesale through critiques related to overbroad definitions or ambiguity regarding its implications underestimates its positive effects on crime reduction in several important areas, such as burglaries, Part 1 crimes, robberies, and gun and drug crimes. These results can provide insights for policy-makers and law enforcement agencies in deciding on the future implementations of CP.

LIMITATIONS AND RECOMMENDATIONS

This study provides insights into the effects of CP on crime reduction, but certain limitations need to be mentioned. First, we selected studies meeting the basic requirements, but we did not further examine the quality of each of the studies included in the meta-analysis. The possibility of variance in the quality of the studies could have affected the results. Second, we excluded certain studies, such as those published in languages other than English and Turkish and those that were not peer-reviewed. These inclusion and exclusion criteria should be considered when interpreting the findings.

Several recommendations can be made regarding future research. First, a multi-lingual team of researchers from different countries could be established to incorporate a greater number of studies written in different languages. We still do not know whether the impact of CP on crime reduction is culture-bound, given that all included studies were written in English and Turkish. This may give a clearer, more inclusive understanding of CP and its impact on crime reduction in a broader international and cross-cultural context. Second, we also recommend that researchers use reliable and valid measures and techniques to assess the impact of CP strategies on crime reduction. Third, it is advisable that future studies use a standardized method with clear and complete data about the methodology and findings (e.g., sample size, mean age, effect sizes) so that meta-analytic conclusions can be drawn in a more complete approach.

Fourth, when country-level implications are reviewed, researchers should be mindful of how robust the organizational commitment to CP strategies actually was during the study period, mindful that lower prioritization of CP activities may be prevalent in the last decade and a half. In short, jurisdictions may express a commitment to CP in their mission or value statements, and other public relations materials; however, upon critical examination, this may not be evident in terms of their day-to-day financial and resource commitments as expressed in their actual operational deployment strategies. An examination of personnel allocation, for instance, will help illuminate the true picture and whether a shift in policing philosophy from traditional to CP-oriented

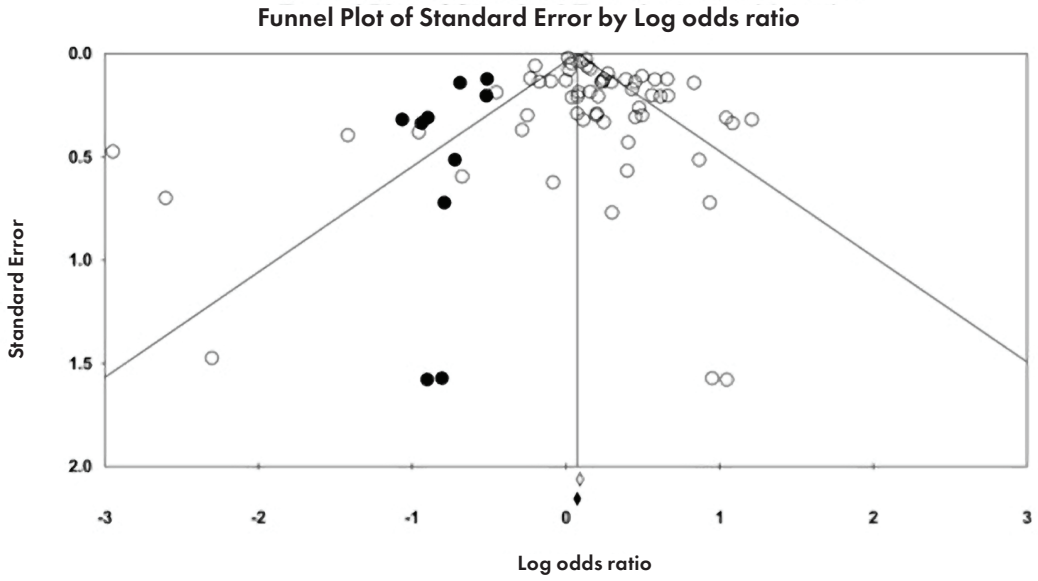

FIGURE 2 Funnel plot

has truly occurred beyond words or aspirations. Community expectations, police management and leadership, and accountability are to be given focus for policy implications in this sense. Prior research suggests that the gradual but steady impact of CP is proven, especially in the United States (Sozer & Merlo, 2012). The impacts, however, may not be manifest when organizations give lip service to a CP ethos that is not supported meaningfully with time, effort, and resources.

In the Turkish context, for instance, CP is assigned to a specific department called the "Community Supported Policing" Bureau ("Toplum Destekli Polislik"), which undertakes small-scale community interventions and activities. Unfortunately, CP is not fully implemented as a philosophical approach in all branches of the National Police but rather as a specific and passive policing position among individual officers. Turkey has sharply disengaged from European Union standards in police procedures, philosophy, and basic human rights (Human Rights Watch Report, 2022) after the corruption scandal (commonly known as "December 17/25 Corruption Scandal") concerning the ministers and the current President in 2014. Since then, the ruling government has pressured the police to prioritize suppression of opposition as opposed to crime prevention and community safety. In addition, the country was plunged into a state of emergency rule for over two years following the coup attempt in 2016 and the state of emergency rules have been practically exercised by the ruling government since, despite some ostensible changes. Researchers must therefore be cognizant, as demonstrated by the example of Turkey previously discussed, of the macro-level political environment of studied jurisdictions and its tremendous impacts on the policing strategies.

Finally, there are many opportunities for research into CP as various jurisdictions, with vigorous commitments to the philosophy, continually innovate with regard to their outreach and community interaction strategies. It would be interesting, for instance, for future meta-analyses to place greater emphasis on the effect of other tools of CP, such as social media outreach, specific deployment strategies, such as increasing foot and/or bicycle patrols in neighbourhoods, and the impact of citizen police academies.

CONFLICT OF INTEREST DISCLOSURES

The authors declare that there are no conflicts of interest.

AUTHOR AFFILIATIONS

*Department of Law Enforcement and Justice Administration, Western Illinois University, Macomb, IL, USA; †Safety, Security and Management Studies Faculty of Public Management, Safety & Law, The Hague University of Applied Science, The Hague, The Netherlands; ‡Department of Law Enforcement and Justice Administration, Western Illinois University, Macomb, IL, USA; §Odessa College, Odessa, TX, USA.

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